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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/905,254	08/01/97	DURKOT R	08935018001 ^{mk}

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IM62/1122

EXAMINER

WILLS, M

ART UNIT	PAPER NUMBER
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1745

13

DATE MAILED: 11/22/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/905,254

Applicant(s)
Durkot et al.

Examiner
Monique Wills

Group Art Unit
1745



☒ Responsive to communication(s) filed on Sep 13, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-28 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-28 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Response to Amendment

The 35 U.S.C. 103(a) rejection of claims 1-28 as being unpatentable over Yoshizawa et al. Patent 5,168,018 in view of Japanese Patent Laid-Open No. 57-182972 is maintained. A brief reiteration is recited below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-²⁸~~21~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshizawa et al. Patent 5,168,018 in view of Japanese Patent Laid-Open No. 57-182972.

The instant claims are drawn to a gelled zinc anode. The anode comprises: zinc alloy particles, a surfactant, an electrolyte, indium and/or barium, and a thickening agent. Ten to eighty percent of the zinc alloy particles are -325 mesh size or smaller. Additionally, the Applicant claims an electrochemical cell comprising the gelled zinc anode, a cathode and a separator.

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Yoshizawa teaches a gel-like zinc anode. The gel like anode comprises potassium hydroxide, sodium polyacrylate, carboxymethyl cellulose (col 6 lines 61-65), indium hydroxide or indium sulfide (col 6 lines 65-68), zinc alloy powder (col 7 lines 1-2), and a surfactant (col 5 lines 30-35). The anode gel is charged into an electrochemical cell comprising a cathode and separator (col 7 lines 9-15). The anode gel is employed in an electrochemical cell comprising a cathode and a separator interposed therebetween (col. 7 lines 10-18).

Yoshizawa et al. does not disclose the shape or mesh size of the zinc alloy particles.

However, Japanese Patent Laid-Open No. 57-182972 teaches fabricating a gelled zinc anodes using a mixture of zinc particles having a grain size of *70-500 microns* and *25 microns or less* (page 7 lines 18-21). The fine particles, of 25 microns or less, are added to the electrode to uniformly disperse the zinc powder in the gelled electrolyte, to increase the surface area, to improve the coefficient of use of the zinc powders and to improve the discharge characteristics of the cell (page 7 lines 21-24). Additionally, the fine particles constitute 5 to 30 wt% of the zinc powder (page 7 lines 10-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the fine zinc particles of Japanese Patent '972 in the gelled anode of Yoshizawa, because the fine particles increase the surface area and discharge characteristics of the electrode. Moreover, the skilled artisan recognizes that the employment of fine zinc particles increases homogeneity of the anode powder through out the gel, enabling the anode to be uniformly disposed against the cathode for optimum cell performance.

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The Examiner acknowledges that the Japanese Patent '972 does not expressly disclose zinc particles of -200 mesh or smaller however, 25 microns or less include zinc particles of small sizes including -200 mesh or smaller. Moreover, the 25 microns or less disclosure does not exclude zinc particles of -200 mesh or smaller.

Regarding the weight percent of fine particles zinc particles employed,

As to the shape of the zinc particles, unless unexpected ameliorative results can be demonstrated from using the particle shaped claimed, the claims are obvious, as the skilled artisan would be able to obtain desired results from particles of the same size.

As to the method of generating an electric current limitation, a battery comprising the constituents described above will inherently generate electric current. Therefore, the claim is obvious, and the limitation is met.

Response to Arguments

The Applicant assert that JP '972 does not cure the deficiencies of Yoshizawa regarding zinc particles size because of the presents of mercury. More specifically, Yoshizawa teaches a mercury free cell, and therefore, the skilled artisan would not be motivated to employ the teachings of an electrochemical cell containing mercury. This argument is not persuasive. As the JP '972 reference was relied on to simply demonstrate the conventionality of small zinc particles

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employed by similar electrochemical environments. Furthermore, JP '972 teaches a gelled zinc anode containing a mixture of zinc particles and a gelled electrolyte very similar to the teachings of Yoshizawa. Therefore, it is not unreasonable to expect the skilled artisan to seek motivation from a very similar environment.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The examiner can normally be reached on Monday - Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maria Nuzzolillo, can be reached on (703) 305-3776, work schedule-first Friday off.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

The unofficial fax number is 306-3429. The Official fax/amendments after final 305-3599.

mw

11/19/99

Maria Nuzzolillo
Supervisory Patent Examiner
Technology Center 1700

